Year Group: 10 Term: 2 (Energy transfers)

We are learning:

1. **Power – How quickly energy is transferred or work is done:**
   $P=Et$
2. **Efficiency – How much of the input energy is usefully transferred:**
   Efficiency=Useful output/Total input
3. **Reducing Energy Waste – Using insulation, lubrication, and efficient appliances to reduce unwanted energy transfers.**
4. **Thermal Conductivity – How well a material conducts heat; important in insulation and building design.**
5. **Specific Heat Capacity – Energy needed to change the temperature of a substance:**
   $E=mc\Delta T$
6. **Heating and Cooling – Energy transfer through conduction, convection, and radiation.**

How can you support your child:

- Encourage them to make revision posters on each of the sub-topics within the topic.
- Encourage them to make cue cards with questions and answers on all the sub-topics.
- Encourage them to use the notes, videos, and quizzes, on BBC Bitesize.
- Encourage them to use Seneca Learning to supplement and secure their knowledge on the topic.

Try asking them:

1. **"How do we know how powerful something is?"**
   Answer: Power tells us how quickly energy is transferred — more power means faster transfer.
2. **"What's the difference between useful and wasted energy?"**
   Answer: Useful energy does the job we want; wasted energy often becomes heat or sound.
3. **"How can we be more efficient?"**
   Answer: By transferring more energy usefully and wasting less — like using insulation or better machines.
4. **"What happens when we heat something up?"**
   Answer: Its particles gain energy and move faster — increasing internal energy.
5. **"How do we measure how much heat something needs to warm up?"**
   Answer: We use specific heat capacity — it tells us how much energy is needed per degree of temperature change.
6. **"Why do some materials heat up faster than others?"**
   Answer: Because they have lower specific heat capacity — they need less energy to warm up.
7. **"How do we stop heat escaping from our house?"**
   Answer: By using materials with low thermal conductivity — like insulation.

Useful Links:

Senecal Learning = https://senecalearning.com/en-GB/

BBC Bitesize = GCSE Physics (Single Science) - AQA - BBC Bitesize

Kerboodle = www.kerboodle.com